

Appl. No. 09/825,276
Amdt. Dated May 5, 2006
Reply to Office Action of February 6, 2006

Listing of Claims:

1. (Currently Amended) A method of operating a radio communication system that includes a downlink channel for transmissions by a primary station to at least one secondary station and an uplink channel for transmissions from the secondary station to the primary station, the method comprising:

transmitting a first signal from the primary station on the downlink channel that includes an indication of the transmit power level used for the transmitting,

determining radio channel characteristics of the downlink channel at the secondary station, based on the indication of the transmit power level,

transmitting an uplink signal from the secondary station on the uplink access channel giving an indication of the radio channel characteristics, and

transmitting a signal from the primary station on the downlink channel at a power level and/or bit rate which takes into account the indication of the radio channel characteristics,

wherein the secondary station:

retransmits an access preamble signal at successively increasing power levels until an acknowledgement signal is received from the primary station, and

in response to the receipt of an acknowledgement signal, transmits a message containing an indication of the power level associated with the access preamble signal for which the acknowledgement signal was received.

2. (Previously Amended) A method of operating a radio communication system that includes a downlink channel for transmissions by a primary station to at least one secondary station and an uplink channel for transmissions from the secondary station to the primary station, the method comprising:

transmitting an uplink signal from the secondary station on the uplink access channel, the uplink signal including an indication of a transmit power level used for the transmitting,

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determining radio channel characteristics of the uplink access channel at the primary station based on the indication of the transmit power,

transmitting a signal from the primary station on the downlink channel at a power level and/or bit rate which takes into account the radio channel characteristics.

3. (Previously Amended) The method of claim 1, wherein the secondary station:

measures a received signal strength associated with the first signal, and
determines the radio channel characteristics based on the indication of the transmit power level and the received signal strength.

4. (Cancelled)

5. (Cancelled)

6. (Previously Amended) The method of claim 1 or 2, wherein
the secondary station retransmits an access preamble signal at successively increasing power levels until an acknowledgement signal is received from the primary station each transmission of the access preamble signal including an indication of its power, and

the primary station determines the radio channel characteristics based on the power and the access preamble signal received and acknowledged.

7. (Previously Amended) The method of claim 1 or 2, wherein the radio channel characteristics include a radio attenuation characteristic.

8. (Previously Amended) The method of claim 1 or 2, wherein the secondary station:

determines a signal to interference ratio (SIR) of a signal transmitted by the primary station, and

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includes an indication of the determined SIR in a signal transmitted on the uplink access channel.

9. (Previously Amended) The method of claim 1 or 2, wherein:
the uplink signal includes a message part of the uplink access channel signal.

10. (Currently Amended) The method of claim 1 or 2, wherein:
the uplink access channel includes transmission of access preambles by the secondary station, and

the transmission of an access preamble is offset in time by a number of chip periods corresponding to the radio channel characteristics, and

the access preambles are encoded with a selected one of a plurality of signatures, and the selected signature is chosen corresponding to the radio channel characteristics ~~according to a quantity to be signaled.~~

11. (Currently Amended) The method of claim 1 or 2, wherein:
the uplink access channel includes a plurality of access sub-channels, and
an access sub-channel is selected by the secondary station for the transmission of an access preamble, ~~based on a quantity to be signaled, and~~

the primary station is configured to determine the timing offset and to adjust a subsequent transmit power level based on the timing offset.

12. (Currently Amended) The method of claim 1 or 2, wherein:
the uplink access channel is a CDMA channel, and
the transmission of an access preamble is offset in time by a number of chip periods corresponding to the radio channel characteristics ~~based on a quantity to be signaled.~~

13. (Currently Amended) A radio communication system comprising:

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a primary station that includes a first transceiver that is configured to transmit signals on a downlink channel, at least one of the signals including an indication of a transmit power level used to transmit the signal, and

at least one secondary station that includes:

a second transceiver that is configured to:

receive the signals from the primary station and transmit uplink signals to the primary station on an access channel, and

a measuring device that is configured to determine radio channel characteristics of the downlink channel based on the indication of the transmit power level,

wherein at least one of the uplink signals includes an indication of the radio channel characteristics, and

the primary station is configured to determine the power level and/or bit rate of subsequent downlink signals in dependence on the radio channel characteristics,

wherein the at least one secondary station includes an encoder that is configured to transmit access preamble signals as CDMA signals, and to offset in time an access preamble signal by a number of chip periods corresponding to the radio channel characteristics.

14. (Cancelled)

15. (Previously Amended) A secondary station comprising:

a transceiver that is configured to receive downlink signals transmitted from a primary station and to transmit uplink signals on an access channel, and

a measuring device that is configured to determine radio channel characteristics of the downlink channel, based on an indicator of transmit power from the primary station, and

wherein at least one of the uplink signals includes in indicator of the radio channel characteristics.

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16. (Previously Amended) The secondary station of claim 15, including an encoder that is configured to offset in time an access preamble signal by a number of chip periods corresponding to the radio channel characteristics.

17. (Previously Amended) A primary station comprising:
a transceiver that is configured to:
transmit signals on a downlink channel to at least one secondary station, and
receive an uplink access channel signal that includes an indication of a transmit power level associated with the signal, and
a measuring device that is configured to determine a power level and/or bit rate to transmit downlink signals to the at least one secondary station based on the indication of the transmit power.

18. (Previously Amended) The station of claim 17, wherein
the uplink signals comprise CDMA access preamble signals, and
the indication includes a timing offset of the access preamble signal relative to a reference time, and
the primary station is configured to determine the timing offset and to adjust a subsequent transmit power level based on the timing offset.

19. (Previously Presented) A secondary station comprising:
a transceiver that is configured to
repeatedly transmit an access preamble signal to a primary station at successively increasing power levels until an acknowledgement signal is received from a primary station, and
communicate the power level associated with the access preamble signal associated with the acknowledgement signal to the station.

20. (Previously Presented) The secondary station of claim 19, wherein

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each access preamble signal that is transmitted includes an indication of the power level associated with the access preamble signal.

21. (Previously Presented) The secondary station of claim 19, wherein the transceiver communicates the power level in a message transmitted to the primary station upon receipt of the acknowledgement signal.